

## PROJECT DESCRIPTION

## I. GENERAL

This portion of the project involves the modification of the existing traffic signal at the intersection of MD 648 and the North Entrance to Cromwell Field Shopping Center / M.T.A. Park and Ride in Anne Arundel County Maryland. MD 648 runs in a North-South direction.

## II. INTERSECTION OPERATION

The proposed traffic signal will operate in a NEMA six (6) phase, fully traffic actuated mode with northbound and southbound approaches operating concurrently with a southbound exclusive/permisive left turn phase. The eastbound/westbound approaches will operate concurrently with an eastbound clearance phase. There is a light rail pre-emption phase to avoid conflicts on the west leg.

The existing eight phase fully traffic actuated controller will remain. New wiring will be brought into the cabinet.

## III. SPECIAL NOTES

- It is the responsibility of the contractor to confirm geometrics prior to placing signal equipment.
- The signal shop will be notified to perform internal wiring of the cabinet at MD 648 @ North Entrance to Cromwell Field Shopping Center/M.T.A. Park and Ride. All cable shall be identified and brought into the controller by the contractor. The contractor shall notify Mr. Edward Rodenhizer, SHA Signal Shop at (410) 787-7650 seventy-two (72) hours in advance of this work.
- MOT Plates for this project will be as follows: 104.00 to 104.00-12, 104.01-01, 104.02-01, 104.03-01, 104.75
- Upon completion of this project the contractor shall notify Mr. Robert Snyder of SHA at 410-787-7635 to arrange for the phone line installation. The contractor is to provide Mr. Snyder with the nearest street address, zip code, and phone.

## THE FOLLOWING CONTACT PERSONS FOR DISTRICT # 5 ARE AS FOLLOWS:

Mr. Richard L. Daff Sr.  
Chief, Traffic Operations Division  
(410) 787-7630

Ms. Kimberly Tran  
Asst. District Engineer - Traffic  
(410) 841-5450

Mr. John Mays  
Acting Engineer - Utility  
(410) 841-5450

Mr. Greg Welker  
District Engineer  
(410) 841-5450

Mr. Charles Georges  
Asst. District Engineer - Maintenance  
(410) 841-5450

The Power Company Representative is:

Mr. Dale Fishback  
Baltimore Gas & Electric Company  
(410) 291-3670

## B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR:

* CATEGORY CODE NO.	SPEC. NO.	QUANTITY	DESCRIPTION
120500	104	L.S.	MAINTENANCE OF TRAFFIC
203030	205	1 C.Y.	TEST PIT EXCAVATION
585620	SP-556	100 L.F.	FURNISH AND INSTALL 12 IN. HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS (CROSSWALK)
801004	801	5 C.Y.	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
802501	810	205 L.F.	FURNISH AND INSTALL STRANDARD BARE COPPER GROUND WIRE (NO. 6 AWG)
805160	805	5 L.F.	FURNISH AND INSTALL 1 IN. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT
811001	811	1 EA.	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813006	813	10 S.F.	RELOCATE SIGNS FROM EXISTING OVERHEAD STRUCTURES
813015	813	26 S.F.	INSTALL OVERHEAD SIGN
800000	818	1 EA.	FURNISH AND INSTALL 27 FT STEEL MAST ARM POLE W/TWIN 60 FT AND 38 FT MAST ARMS
837001	804	1 EA.	FURNISH AND INSTALL GROUND ROD $\frac{3}{4}$ IN. DIA. X 10 FT. LENGTH
860272	814	25 EA.	FURNISH AND INSTALL 12 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION (BLACK FACED)
860278	814	2 EA.	FURNISH AND INSTALL 12 IN. PEDESTRAIN SIGNAL HEAD SECTION POLE MOUNT
861105	810	200 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861106	810	205 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 AWG)
861107	810	370-870 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	810	840-340 L.F.	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
861104	810	540 L.F.	FURNISH AND INSTALL 2 CONDUCTOR (ALUMINUM SHIELDED) (NO. 14 AWG)
862101	810	550 L.F.	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 A.W.G.)
862102	810	160 L.F.	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
865001	817	1 EA.	FURNISH AND INSTALL PUSHBUTTON AND SIGN
870163	805	10 L.F.	FURNISH AND INSTALL 3 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - TRENCHED
870164	805	80 L.F.	FURNISH AND INSTALL 3 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - BORED
870168	805	80 L.F.	FURNISH AND INSTALL 4 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - SLOTTED
873001		L.S.	REMOVE AND SALVAGE EXISTING EQUIPMENT

\* CATEGORY CODE NUMBERS ARE PROVIDED FOR SHA REFERENCE ONLY AND DO NOT RELATE TO ACTUAL BID ITEMS.

## C. EQUIPMENT TO BE RETURNED TO SHA BY THE CONTRACTOR:

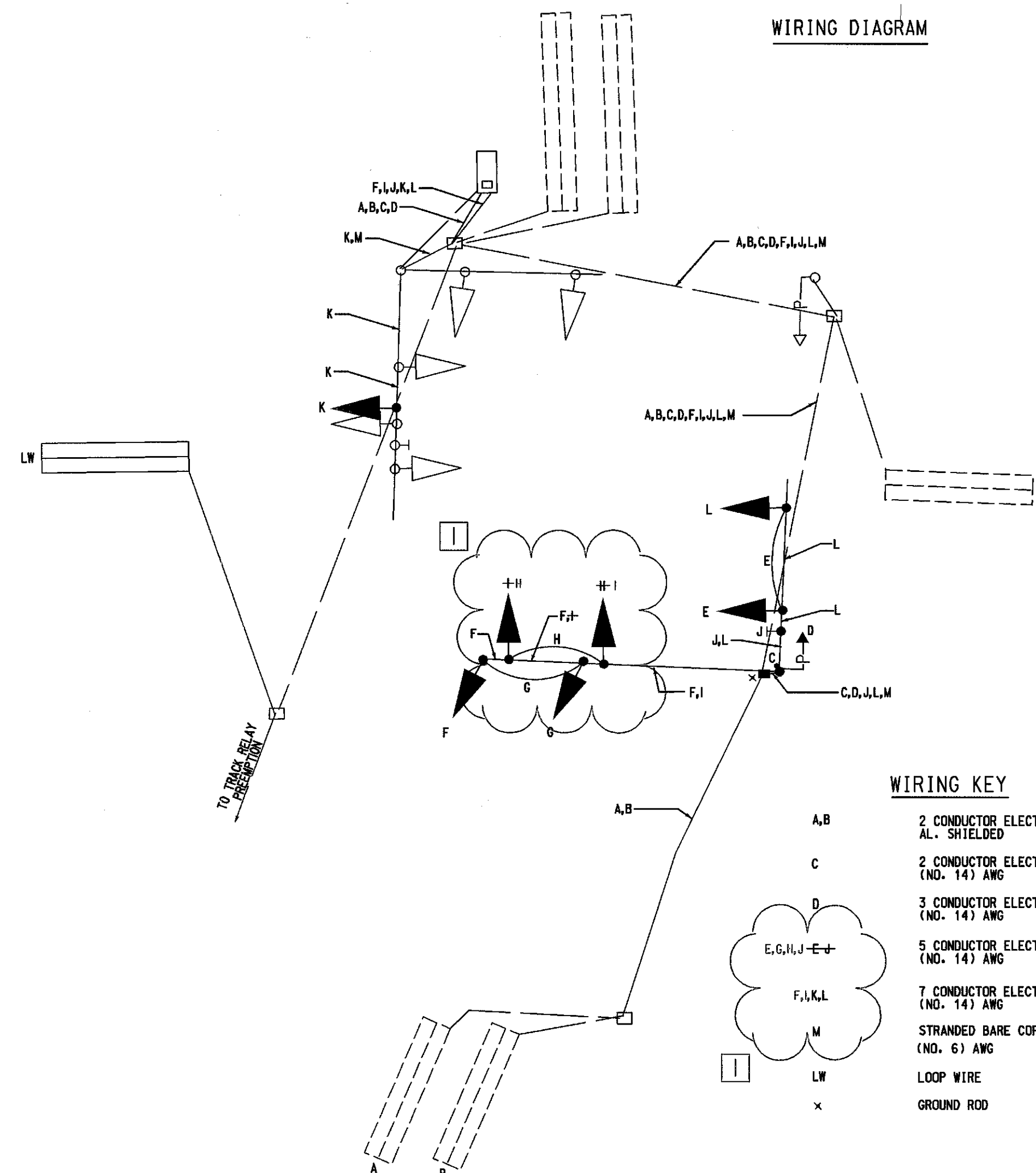
NONE

## EQUIPMENT LIST

## A. EQUIPMENT TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR:

* CATEGORY CODE NO.	SPEC. #	QUANTITY	DESCRIPTION
900000	813	26 S.F.	SHEET ALUMINUM SIGNS
			- 1 EA R3-SR SIGN 30"x36" LANE USE - RIGHT TURN ONLY
			- 1 EA R3-SL SIGN 30"x36" LANE USE - LEFT TURN ONLY
			- 1 EA R10-12 36"x42" "LEFT TURN YIELD ON GREEN (BALL)"

## WIRING DIAGRAM



## WIRING KEY

- A, B 2 CONDUCTOR ELECTRICAL CABLE AL, SHIELDED
- C 2 CONDUCTOR ELECTRICAL CABLE (NO. 14) AWG
- D 3 CONDUCTOR ELECTRICAL CABLE (NO. 14) AWG
- E, G, H, J, E+ 5 CONDUCTOR ELECTRICAL CABLE (NO. 14) AWG
- F, I, K, L 7 CONDUCTOR ELECTRICAL CABLE (NO. 14) AWG
- M STRANDED BARE COPPER WIRE (NO. 6) AWG
- LW LOOP WIRE
- X GROUND ROD

## PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	16	18
PHASE 2 & 5	G	G	G	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK
PHASE 2 & 5 CHANGE	G	G	G	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK
PHASE 2 & 6	G	G	G	G	G	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK
PHASE 2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK
PHASE 4 & 8	R	R	R	R	R	G	G	G	G	G	G	DONT WALK	DONT WALK	DARK	DARK
PHASE 4 & 8 CHANGE	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DONT WALK	DONT WALK	DARK	DARK
PHASE 4 CLEARANCE	R	R	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK
PHASE 4 CLEARANCE CHANGE	R	R	R	R	R	R	R	Y	Y	Y	Y	DONT WALK	DONT WALK	DARK	DARK
PHASE 4 & 8 ALT.	R	R	R	R	R	G	G	G	G	G	G	WALK	WALK	DARK	DARK
PED CLEAR	R	R	R	R	R	G	G	G	G	G	G	FLASH DT WK	FLASH DT WK	DARK	DARK
PHASE 4 & 8 ALT. CHANGE	R	R	R	R	R	Y	Y	G	G	Y	Y	DONT WALK	DONT WALK	DARK	DARK
LIGHTRAIL TRACK CLEAR	R	R	R	R	R	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK
LIGHTRAIL TRACK CLEAR CHANGE	R	R	R	R	R	R	R	Y	Y	R	R	DONT WALK	DONT WALK	DARK	DARK
LIGHTRAIL HOLD	G	G	G	G	G	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK
LIGHTRAIL HOLD CHANGE	Y	Y	Y	Y	Y	R	R	R	R	R	R	DONT WALK	DONT WALK	DARK	DARK
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK

